

REPORTS

TO THE

LOCAL GOVERNMENT BOARD

ON

PUBLIC HEALTH AND MEDICAL SUBJECTS.

(NEW SERIES No. 18.)

Dr. F. St. George Mivart's Report to the Local
Government Board on the General Sanitary
Circumstances and Administration of the
Borough of King's Lynn.



LONDON :
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C. ; or
OLIVER AND BOYD, TWEEDDALE COURT, EDINBURGH ; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1909.

Price Threepence.

75

Dr. F. St. George Mivart's Report to the Local Government Board on the General Sanitary Circumstances and Administration of the Borough of King's Lynn.

ARTHUR NEWSHOLME,

Medical Officer,

26th October, 1909.

For a considerable time past the Board have been aware that friction and difficulty prevailed between the Town Council of King's Lynn and their medical officer of health.

In October, 1908, the Town Council of King's Lynn confirmed a resolution of their Finance Committee that the Borough Health Department should be reorganised. Under the scheme of re-organization a medical officer of health was to be appointed for the Urban and Port Sanitary Districts who should act also as Medical Superintendent of the Fever and Small-pox Hospitals and as medical officer for elementary education purposes, devoting his whole time to these duties and receiving a salary of £300 per annum.

To this project the Board demurred, pointing out to the Town Council the importance of securing a medical officer of health who had received a special training in public health work, and stated that the total salary payable to a medical officer of health thus specially qualified and giving the whole of his time to his public work should not be less than £500 per annum. The Board added that in cases where the total remuneration fell short of £500 per annum, they would only sanction the arrangement on the understanding that while giving his whole time to the Council in other

L O N D O N :

PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C.; or
OLIVER & BOYD, TWEEDDALE COURT, EDINBURGH; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1909.

Price Threepence.

No. 18.

(14288—21.) Wt 15721—883. 500. 11/09. D & S.

A

respects, the officer appointed should be at liberty to supplement his income by acting as consultant in cases of infectious disease if invited so to do; by acting as public vaccinator or by performing analyses or other laboratory work, or by receiving qualified men as pupils, or by engaging in other work not being that of a general medical practitioner.

In December, 1908, the Council wrote that they accepted the terms thus laid down, and authorized the town clerk to advertise for a medical officer of health upon this understanding at a salary of £300 per annum.

From the local press it is apparent that opposition followed this decision. By the local medical practitioners, in particular, the scheme was received with hostility. Finally the resolution in favour of the proposal was rescinded. After an attempt had been made to elect a medical officer of health without previously advertising the appointment, an advertisement was issued in the local press inviting medical men practising in Lynn to apply for the offices of medical officer of health to the Urban and the Port Sanitary authorities, upon the terms on which these appointments were then actually held by Mr. Allinson, viz., £150 per annum *plus* certain fees.

Two practitioners only offered themselves for election, viz., Mr. H. C. Allinson, who had held these offices since 1901, and Mr. J. R. Kingdon, another practitioner in the borough. The latter was elected by a majority of four at a meeting of the Town Council held on February 19th, 1909.

In reply to the Town Council's intimation of this change in the appointment, the Board wrote on March 4th that they had decided to order an inquiry into the sanitary circumstances and administration of the borough by one of their medical inspectors, and that, pending receipt of the inspector's report, they were not prepared to sanction the appointment of Mr. Kingdon in place of Mr. Allinson.

At this stage I received instructions to make the inquiry above referred to, and, to this end, I visited King's Lynn in May, and on subsequent occasions.

The municipal borough of King's Lynn, in the County of Norfolk, 3,061 acres in extent, had, at the Census of 1901, a population of 20,289, which is estimated to have increased to 21,000 by the middle of the present year. I am informed that there are 5,074 inhabited houses in the borough at the present time. Of these, 1,064 are rated up to, and including, £5; 2,626 are rated at over £5 and up to, and including, £10. The rateable value of the borough is £85,850, and its assessable value £78,500. The total balance of its outstanding debt is £134,020. The current general district (including dock) rate is 3s. 8d., of which 6½d. is required for sanitary, and 8d. for loan repayment purposes.

During the decennium 1899-1908 the mean annual birth-rate was 25·29; the mean annual death-rate from all causes was 15·75; while the mean annual infantile mortality was 127 per 1,000 births.

The following table shows the number of cases of, and deaths from, diphtheria, enteric fever, and scarlatina in the borough of

King's Lynn from 1901-1908, *i.e.*, the period in which Mr. Allinson was medical officer of health :—

TABLE showing the number of cases of, and deaths from Diphtheria, Enteric Fever, and Scarlatina from 1901 to 1908, in the Borough of King's Lynn.

Year.	Diphtheria.		Enteric Fever.		Scarlatina.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1901	33	3	49	8	38	0
1902	6	0	40	7	43	0
1903	17	1	47	4	146	2
1904	19	2	47	6	171	7
1905	10	2	20	2	31	2
1906	6	1	21	5	48	1
1907	7	1	23	1	26	0
1908	5	2	31	3	16	0
Totals	103	12	278	36	519	12

From the table above will be seen that in each year during the period covered a considerable number of cases of enteric fever have been notified. In the decennial period immediately preceding this, also, there had been a large number of cases of the same disease ; as will be seen from the following table :—

Enteric Fever.

Year.			Cases.	Deaths.	Year.			Cases.	Deaths.
1891	13	0	1896	26	6				
1892	131	19	1897	494	51				
1893	50	3	1898	150	18				
1894	34	4	1899	108	25				
1895	27	4	1900	58	9				

From 1900 there had been a diminution until 1908, when there was some increased prevalence of the fever, to be followed, however, during the present year by a comparative freedom from it. Down to the close of the month of August of the present year only 2 cases of enteric fever had come to the knowledge of the medical officer of health.

Mr. Allinson prepared a spot map showing the locality of all the cases of enteric fever from 1901-1908, and it was found that these cases were scattered all over the town. With regard to the cause of the disease Mr. Allinson, as the result of his inquiries, came to the conclusion that neither articles of food such as milk nor shellfish had played any part in the causation of the disease. With regard to the shellfish, he was able in a few instances only to

find the previous ingestion of shellfish associated with cases of this fever, but the dates of such ingestion did not correspond with the recognised period of incubation.

I, myself, made inquiries in various instances (including the two cases notified during the present year) without clearly affirmative result. By one patient "clams," and by the other cooked cockles had been respectively partaken of. But here again it was not possible to reconcile the dates of the ingestion of these articles with the apparent earliest possible date of invasion. Inquiry as to seasonal prevalence of the fever showed that the cases cropped up in all months of each year without any indicated preference.

By Mr. Allinson the recurrence of cases of enteric fever has been persistently ascribed to the insuction of infective matter through defective water mains and service pipes. He has adduced no positive evidence in support of this view. His statement is rather in the nature of surmise based upon the want of evidence of other cause.

Mr. Allinson had already been asking that an inspector should be sent to Lynn to investigate the alleged insuction through pipes when in October, 1908, Colonel Hepper, then one of the Board's engineering inspectors, held public inquiry concerning an application by the Lynn Town Council for sanction to borrow £5,000 for extensions and additions to the water supply. This inquiry was not attended by Mr. Allinson. It is to be regretted, as the Board subsequently informed him, that he did not appear at the inquiry and lay his case before the inspector.

Mr. Allinson attributes the decrease in the number of cases of enteric fever to the steady removal of defective water mains and worn-out service pipes. His views have not been accepted by the waterworks committee of the town council, whose engineer denies that any noteworthy number of leaks or defects have been found.

On three previous occasions Lynn has been inspected by members of the Board's medical staff. In 1882, the late Dr. Airy investigated an outbreak of diphtheria in the borough; in 1892 Dr. Bruce Low reported upon an epidemic of enteric fever; and in 1897 I myself investigated a sudden and violent outburst of the same disease.

GENERAL SANITARY CIRCUMSTANCES.

Roadways.—There are 9 miles 5 furlongs of main road, and 12 miles 2 furlongs of borough road. The roads now being developed, but not yet dedicated, amount to upwards of 4 miles. It appeared to me that the condition of roads in the borough leaves a good deal to be desired. Many of the important thoroughfares are paved with cobble stones, while a good deal of such paving is old and uneven. The streets were generally fairly clean at the time of my visit.

Housing Accommodation.—Dwellings in the borough are thus referred to by Dr. Bruce Low:—"Many of the streets in Lynn are narrow, and in certain quarters there are courts or yards thickly populated, and entered by narrow passages. These courts or yards, many of which are unpaved, are frequently surrounded by high

walls, which exclude sunlight and prevent free circulation of air. Dwellings in these courts are not unfrequently in bad repair, and they tend to be overcrowded."

This description written seventeen years ago is still perfectly applicable save in respect of paving. Within the last few years a great deal has been accomplished in this direction. The efforts of the inspector of nuisances have been and are still being directed to this matter, and in the central parts of the borough there are few narrow courts unprovided with paving. It is a feature of the central part of the borough of Lynn that the houses of the well-to-do, and the dwellings of the poorer classes stand close together, so that, while there are indeed certain special "slum areas," slums are also scattered throughout the town. From certain of the principal thoroughfares some of the narrowest courts are approached, and from these again open other courts, forming in some cases a network of slum property. In one instance a yard of this kind is entered by a passage only 3 feet 4 inches wide. In another four houses, without any back outlet, open upon a court 4 feet 6 inches wide, closed by a wall 6 feet 6 inches high. In another instance three houses, without back outlet, open upon a court 19 feet long and 5 feet 3 inches wide, closed by a wall 6 feet 6 inches high. This yard, facing north, receives no sunshine at all. It is paved, and contains one water-closet for the use of three houses. The ground and the first-floors of one of these houses are let to separate tenants, at rentals of 2s. per week.

Courts of such dimensions and of such character are extremely common in Lynn, and are scattered about the borough. Such courts are commonly paved, but where the paving is of cobbles it is frequently seen displaced and uneven. Some of the larger courts are unpaved, and in some cases there is hesitation in taking proceedings to secure paving, owing to the heavy expense that would be entailed upon owners. In such courts open and dilapidated ashpits were not unfrequently found, or occasionally gutter spouting and drain pipes were seen broken, or were absent, thus entailing dampness of house walls.

In the central parts of the borough houses are, with very few exceptions, old; there has been very little building of recent years. Roofs are frequently of tiles, and for the most part seemed fairly sound, but dampness, due to defective guttering, not unfrequently penetrates to the insides of rooms.

Instances were met with of houses let in separate rooms or tenements, and the condition of such is generally far from satisfactory. Rents appear high, especially considering the accommodation offered and the absence of light and air.

The lowest rent met with was 1s. 4d. per week in respect of two rooms reached by an almost perpendicular staircase, opening directly to a filthy yard. The room on first floor had no through ventilation, the other room was an unused attic. The ground floor room of this house was empty, being in such a state of dilapidation as to be uninhabitable. The premises were the property of a Town Councillor. The houses on opposite sides of this yard have been shored up for some years past, but are still inhabited. In a recess of this yard are three closets without light or ventilation.

There is a large amount of property that may be classed as insanitary in Lynn, chiefly by reason of its want of light and of through ventilation.

I heard of only six back-to-back houses, but I am informed that upwards of three hundred houses have no through ventilation of any kind, while fifty others have no through ventilation above the ground floor.

Greater effort should be made to have such property effectually dealt with. It is, of course, evident that such houses cannot be at once abolished, as to do this would require demolition of a large portion of the borough, but when premises have been condemned and a closing order obtained, advantage should be taken of Sections 33 and 34 of the Housing of the Working Classes Act, 1890, to secure their demolition whenever possible.

Lynn is admittedly much infested with rats and mice. The old houses, closed and gradually rotting to pieces, become the haunt of such animals.

Water Supply.—In this matter there has been an enormous advance since Dr. Airy's visit in 1882. The Gaywood river which, as Dr. Airy observed in his report had been "from time immemorial the source of the water supply of King's Lynn" and which was shown both by Dr. Bruce Low in his report in 1892 and by myself in 1898 to have been the cause of calamitous outbreaks of enteric fever, is now no longer drawn upon.

The present water supply is furnished by the Corporation and dates from 1896, in which year an enquiry was held concerning an application to borrow £26,000 for providing a public water-supply. Up to the present time the cost of this water supply has been upwards of £40,000. The water was actually supplied to the borough for the first time in 1899. The waterworks are at Gayton, about six miles from Lynn. Here three wells have been sunk into the chalk which comes almost to the surface at this spot.

Two of the wells are 100 ft. deep and 6 ft. 3 in. in diameter; the other is 110 ft. deep and 8 ft. in diameter. Headings 4 ft. wide and 6 ft. high lined with open brickwork run north and south from the bottom of the western well; a similar heading from the eastern well runs eastward. The wells have a 14 in. concrete lining to a depth of 24 ft. from the surface of the engine room floor and another 76 ft. of 4-in. concrete. One well had, formerly, an additional 50 ft. boring through the gault clay into the green-sand, but this boring has been closed. The normal depth of water in the well is about 40 ft., which is reduced to about 20 ft. after fifteen hours continuous pumping. From the wells the water is pumped through 15-in. iron mains to a closed reservoir at Bawsey holding about a million gallons. The lower half of this reservoir is divided into two compartments to enable cleaning, &c., to be carried out without interference with the constant supply to the town. There is no filtration or other treatment of the water. The average quantity consumed per day is 850,000 gallons. The water is analysed from time to time. The quality has been uniformly good. There is no reason to regard this water as otherwise than wholesome.

From the Bawsey reservoir the water flows by gravitation to the borough through iron mains which were laid at the time this service was installed.

As regards the distributing mains and service pipes of the borough, these are not all new. In January, 1900, the Board sanctioned, after public enquiry, a loan of £2,500 for the purpose of replacing old distributing mains, said to be much corroded.

As regards Mr. Allinson's theory of causal relation between defective mains or service pipes and occurrence of enteric fever, I am assured by the Surveyor that there have, indeed, been here and there, since he has held office, a few leaks in water mains, but that these at once revealed themselves, and that none of these have been alleged by Mr. Allinson to be associated with cases of enteric fever. But where, without spontaneous indication, mains have been uncovered to search for leaks, such mains have invariably been found free from defect. The Surveyor admits that defective service pipes have been found but not in association with occurrence of enteric fever in the house or houses supplied by such service pipes.

But, notwithstanding these facts, Mr. Allinson's view is that the distribution of certain cases of enteric fever could be best explained upon a hypothesis that insuction of pollution has occurred from the surrounding soil.

I was desirous of examining some of the mains, and was offered facilities for this by the Town Council. I invited the late Medical Officer of Health to point out any water mains that might be regarded suspiciously. Openings were accordingly made at Baxter's Plain, in Blackfriars Street, and in Broad Street. The mains uncovered were obviously old but appeared to be sound.

Formerly there were a good many wells in the borough, but they gradually became disused. At the time of my report in 1898 out of 4,161 houses in the borough only 40 had a water supply independent of the Corporation works. The Inspector of Nuisances assures me positively that the entire water supply of the borough is now from the Corporation mains.

Sewerage.—The Surveyor informs me that the sewers of Lynn have nearly all been laid since 1897. They are of glazed and socketed pipes from 9 inches to 24 inches diameter. The whole sewage of the borough, in a highly dilute condition, being mixed with a large quantity of land water coming from the hills east of Lynn, is discharged into the Great Ouse at half ebb tide. The outfall sewers are four large brick culverts, viz:—the North outfall, 74 inches diameter; the Purfleet, 60 inches diameter; the Millfleet outfall, 50 inches diameter; and the Nar outfall, 24 inches diameter, the last named discharging into the River Nar, a tributary of the Great Ouse, near its mouth.

The Purfleet and Millfleet outfalls take place into creeks, locally known as "fleets," which formerly extended for a considerable distance into the town. The upper portions of these fleets have now been converted into sewers by culverting. But although the Millfleet outfall issues into the fleet nearly 200 yards from the river only business premises abut upon this part of the fleet. Perhaps for this reason little complaint is made of nuisance.

As regards the Purfleet outfall, however, the culvert of which ends at upwards of 230 yards from the River Ouse, I heard strong complaints. The backs of dwelling-houses in Purfleet Street abut upon this creek, and on the numerous occasions when I examined it, the mud-banks and bottom were in a very foul condition. Moreover, from my own observation of foul matter, such as blood, flowing into it apparently from slaughter-houses, I am convinced that all such foul matter does not escape into the river, but is, in part, carried up and down by the tide. The rise of the tide amounts to 25 feet.

The sewers were designed of sufficient size to take all the upland and storm water during tide locking. The London Road sewer has a special storm overflow to the Middleton Stop Drain. I did not hear of any flooding of houses such as came to my notice when I visited the town in 1897. The Surveyor states positively that no report of flooding anywhere has reached him since he took up office in 1906, except that of a cellar in Portland Street.

Excrement Disposal.—In this matter a great advance has been made since 1882. The Inspector of Nuisances states positively that, so far as he is aware, no closet other than a water-closet exists in the populous portion of the borough. In outlying and scantily populated parts of the borough, as for instance at Hardwick Cottages, there are privies with moveable receptacles which are emptied and cleaned by the town council. The contents are said to be removed in the borough refuse cart to the "tip."

All water-closets, however, do not discharge to sewers. In the neighbourhood of the river Ouse and along the "fleets," numerous water-closets discharge upon the mud banks. The Inspector of Nuisances states that seventeen drain outlets from properties in Purfleet street discharge upon the mud in Purfleet. Numerous other closet drain outlets discharge upon the bank of the Ouse from properties in King Street, Purfleet Quay, Common Staith Quay, and Boal Quay. On various occasions I observed faecal matter lying upon the mud just below the houses on the south side of Purfleet Street; and many of the inhabitants appear to use this place to deposit their house refuse. These foul accumulations are apparently not reached by neap tides.

The condition of the water-closets seen was remarkably satisfactory. All are provided with flushing cisterns, and it was exceptional to find them out of order. The number of water-closets, however, is frequently insufficient. In the poorer parts of the town it is of common occurrence to find as many as three houses provided with only one w.c. for the use of their inhabitants. Moreover, such w.c.'s in numerous instances have no light or ventilation.

Refuse Disposal.—Refuse is removed once a week in every part of the borough by the town council. The men employed by the council enter and remove all refuse placed ready in moveable receptacles. The refuse is taken to a tip on the southern outskirts of the town, where it is allowed to accumulate in very large quantity. Anyone is permitted to remove refuse for garden purposes upon applying to the Surveyor for permission to do so.

There are still a good many uncovered brick ashpits in different parts of the borough. In the poorer parts of the town refuse is often stored in unsuitable receptacles, from which it is apt to escape upon the ground, and in such places I saw a number of accumulations of refuse here and there.

A register of *common lodging-houses* is kept, and I found that four premises had been entered upon it, but there are no bye-laws in respect of these places.

At one unregistered common lodging-house, having accommodation for fourteen persons, the wall paper of all the rooms except two, as well as that of the staircase, was found to be in a most filthy condition, and peeling off here and there.

At another common lodging house (registered) in the same street, the staircase is almost perpendicular, and having no rail or rope, is dangerous, owing to the steep "risers" and narrow "treads." The upper floor of this house has no through ventilation. At another the proprietress showed a room reserved for two couples. There was no screen or curtain. This room she informed me had been occupied by two couples on the previous night.

At another registered house having accommodation for 40 lodgers I found the premises clean and in good order though the house is old and rather dilapidated. Here all the windows are kept open during the day.

One registered common lodging-house is a licensed public-house. I was informed that the absence of a common "kitchen" rendered it impossible to enforce registration of another public-house, the manageress of which stated in my presence and in that of the Inspector of Nuisances that beds are let to casual lodgers at 6d. and 9d. In one room of this house I found nine* beds, and five in another. It was stated that men only are thus received here.

That public houses should be used as common lodging houses is open to serious objection. It seems probable that other public houses in Lynn could be found at which nightly lodgers are received in common lodging house fashion. I, myself, found one such in an important thoroughfare. The proprietor showed a room containing four beds which, he said, could be let to nightly lodgers at 4d. and 6d., but as matter of fact, he has few applicants. It is regrettable that the town council have disregarded the duty imposed upon them by section 80 of the Public Health Act, 1875, to make bye-laws in respect of common lodging houses. In a seaport town such as Lynn there is special desirability for bye-laws in respect of such places. The inspection of common lodging houses is in the hands of the chief constable.

Tenement lodging houses are not registered, and their number is not known. In those seen the rooms seemed to be occupied by single men or women, or by elderly married couples without children.

There are 13 registered *slaughter-houses*. Some of these are situated in crowded parts of the town where they cannot fail to be

* This room has two windows on one side only and contains only 229 cubic feet air space per bed. The Board's Model Bye-laws give 300 ft. as the minimum cubic space per bed.

a nuisance. For instance I found a slaughter-house with small pig-styes attached, opening upon a yard 13 ft. by 13 ft. and closed in by a wall upwards of 7 ft. high. An open channel runs down this yard to a gully.

With a few exceptions, the actual slaughter-houses were kept as clean as they could be, but they are nearly all old and in some cases dilapidated structures. Many, indeed, are unsuitable for the purpose. Floors were frequently seen broken and uneven. One slaughter-house seemed to be formed out of a small dwelling house which had been gutted, and a dwelling house in occupation adjoined it. Another consisted of a small back yard roofed over. One of the worst slaughter-houses seen adjoined the principal thoroughfare and consisted of an outhouse close to the back of a dwelling. A mass of dung and offal was found here and had admittedly been accumulating for three days. An objectionable feature of several slaughter-houses is a species of loft or attic in the ceiling—made a receptacle for all sorts of rubbish and harbouring filth. A special local feature of slaughter-houses is that occupiers allow the use of their premises by other persons upon payment.

There are 28 registered *milk-shop* proprietors, of whom 16 are also cowkeepers. Dairying operations, however, seem to be carried on to a very small extent only. The principal trade in milk is in the hands of registered milk sellers whose cow-houses are outside the borough boundary.

Of the milkshops, the principal one is cleanly and tidily kept, but in other cases milk was being kept in small quantities uncovered upon the counters or shelves of shops belonging to small grocers or general dealers, where it is exposed to many sorts of contamination. It is desirable that measures should be taken to prevent milk being exposed for sale in this manner. All cowhouses at the time of my visit were empty, the cows being in the fields and in some cases milked there. In one cowshed a cow was found with serious disease, apparently tubercular, of the udder. The cow was said to have ceased to yield milk, and the owner expressed the intention of having the animal killed. The premises in this case were fairly clean, but here, as in other instances, milk cans were seen, after cleaning, left open and exposed to dust and dirt blown into them.

At one of the largest cowhouses in the borough, holding 17 cows, the floor was broken and uneven, the drainage channel discharging into a dyke adjoining the shed. There was also an accumulation of liquid filth adjoining another entrance to the same building.

There are few cowhouses in the populous portion of the borough, and the arrangements in connection with these are not good. A cowhouse containing 2 or 3 cows—in the fields at the time of my visit—forms part of a dwelling house containing two rooms, one up and one downstairs. The byre adjoins the living room, and the inmates complained that the smell of the cowhouse was at times perceptible in this room. The cowhouse itself was in a foul condition, and contained two drain openings.

The dairies seen were all small, and with few exceptions contained food and miscellaneous household articles. Some of the dairies or milk-storing places are simply sculleries entered from dwelling rooms.

Bakehouses are registered. A large number were visited and were for the most part found in satisfactory condition. Many were cleanly and well kept.

No register of *offensive trades* is kept. In one instance bone boiling is carried on in premises where accumulations of filth of various kinds were said to give rise to nuisance.

There is not much nuisance in regard to keeping of cattle and pigs save in connection with slaughter houses.

The keeping of poultry, however, demands supervision and control. I found poultry and pigeons being kept in small back yards in curtilages where nuisance from this cause cannot fail to arise.

SANITARY ADMINISTRATION.

The town council consists of 26 members who meet monthly, and there are 19 separate committees. The health committee consists of 12 members who meet once a month, when they receive the reports of the medical officer and inspector of nuisances. The health committee's recommendations are in due course considered by the town council. As matter of fact, it appears that on occasions there has been some friction between the health committee and the town council.

In November last a resolution of the health committee in regard to the closure of certain unwholesome dwelling houses was referred back to the committee by the town council, and though the health committee confirmed their previous resolution, the town council finally decided that it should not be adopted.

Breaches of the bye-laws have been tolerated in the case of houses erected upon land belonging to the corporation in Loke Road. Here clause 48 of the bye-laws regarding new streets and buildings, requiring the provision of not less than 150 square feet clear space in the rear of a new building is not complied with.

Disregard of the important bye-law respecting air-space is shown at a great number of new houses in the same neighbourhood. I found also that in some back yards the erection of various structures in contravention of the bye-laws had been tolerated. Some yards indeed seemed to have been more or less covered in by some kind of light structure.

Clause 62 of the same code requiring the provision of a window of not less dimensions than 2 feet by 1 foot, in the external wall of a water-closet, is similarly transgressed. Indeed the disregard of this latter bye-law is common, and may be seen both in the case of houses recently erected and now in course of erection.

Clause 3 (a) of the bye-laws with regard to new streets and buildings, requiring that the carriage way of a new street shall have a minimum width of 20 feet, has also been disregarded.

I found that in the case of an estate now being developed, an approach road of less than 17 feet in width had been allowed. Upon this same estate there is a pavement only 4 feet 1 inch in width, the width of the road being 30 feet. Clause 3 (e) of the code with respect to new streets and buildings requires that such footway shall be not less than one-sixth of the entire width of the street.

It would seem that, at any rate at the close of my visit, action was being taken with regard to certain recent transgressions of the building bye-laws, and notice had been served upon one builder, requiring him to show cause why a building erected by him should not be pulled down, although, as he stated, such building had been erected in accordance with a plan submitted to, and sanctioned in writing by, the committee. I also found that a considerable alteration of structure then going on in a central part of the town contravened the bye-laws, inasmuch as the wall of a gable is only $4\frac{1}{2}$ inches instead of 9 inches in thickness.

It was stated to me by a councillor that these and other breaches of the building bye-laws had not come to the knowledge of the committee, but this is not an excuse inasmuch as the town council employ an expert officer whose duty it should be to detect such contraventions of bye-laws and draw the attention of the committee thereto.

The following bye-laws are in force in the borough :—

With respect to nuisances	Allowed by the Local
“ “ new streets and buildings...	Government Board,
“ “ the markets	1st April, 1880.
“ “ slaughterhouses	
“ “ alterations to buildings ...	Allowed by the Local
	Government Board,
	26th June, 1893.

Regulations for dairies, cowsheds and milkshops were put in force on 16th July, 1892.

There are also several local Acts of Parliament dealing with sanitary matters.

Until the month of February of this year the medical officer of health was Mr. Henry Calthrop Allinson, M.R.C.S. Eng., L.S.A. Mr. Allinson holds no special qualification in public health. As medical officer of health he received an annual salary of £150, half repaid from county funds, and carried on, as he still does, a private practice in the borough. His salary had been originally fixed at £75, but in 1902 it was doubled. He also held the appointment of medical officer of health to the port sanitary authority, receiving fees of 10s. 6d. for each inspection of a ship in the river and £2 2s. for a ship in Lynn roads.

As medical officer to the port sanitary hospital and to the small-pox hospital he received respectively fees of 3s. 6d. and £1 1s. for each attendance at these institutions. He also held, and still holds, the appointment of medical officer for the examination of elementary school children at a salary of £100.

As to Mr. Allinson's zeal there can be no question, nevertheless it is the fact that his annual reports have failed to give the Board information in regard to certain matters. They have also failed to record the systematic inspections which, as medical officer of health, he is required to make. His reports and letters tend to create the impression that his inspections have been to some extent spasmodic. In 1906 the Board had to draw his attention to this lack of detailed information. On the 5th August, 1908, they had to write in a similar sense, and also to require a supplementary report

which should contain these facts. This report, which was not received until the 28th October, was found to allege a want of support on the part of the council as regards the improvement of housing in the borough. Mr. Allinson also renewed his contention that the recurrence from time to time of cases of enteric fever was due to local contamination of water supplies by infective matter in the soil, through faulty mains and service pipes.

The medical officer of health elect is Mr. J. R. Kingdon, M.R.C.S. and L.R.C.P. London, who is engaged in private practice in the borough. His appointed salary is the same as that allowed to Mr. Allinson.

Like Mr. Allinson he possesses no special qualification in public health, but he acted as temporary medical officer of health in the borough from November, 1900, to February, 1901, during the last illness, and after the death, of the former occupant of this office until Mr. Allinson's appointment.

Mr. Kingdon informed me that his intention was to devote two afternoons every week to systematic inspection in company with the inspector of nuisances.

He had been supplied with a journal, but had not, at the time of my visit, begun to keep this.

The *inspector of nuisances* is Mr. J. W. Shaw, certificated by the Royal Sanitary Institute, who was appointed in April, 1899, and receives a salary of £95, half repayable from county funds. Mr. Shaw holds similar office under the port sanitary authority at a salary of £25, and receives a further salary of £20 as captain of the fire brigade. He acts as inspector of canal boats without salary. Previous to his appointment at King's Lynn, Mr. Shaw worked in the surveyor's department at Grimsby, and was subsequently clerk of the works there. Later, after having acted as assistant to the port sanitary inspector at Grimsby, he became sanitary inspector in charge of the eastern district of that borough.

The work of inspection is well performed by Mr. Shaw, and he has given special attention to the paving of curtilages, and has effected much improvement in this direction. But his book-keeping has fallen considerably into arrear.

The surveyor and borough engineer and manager of the water-works is Mr. J. H. Webb, C.E., who receives an annual salary of 300*l*. He further discharges, without additional payment, the duty of surveyor to the Education Committee. Mr. Webb is also dyke reeve for the Middleton Stop drain, the Pierpoint drain, and the South Lynn north district, receiving an annual salary of 11*l*. 11*s*.

The chief constable of King's Lynn, Mr. Walter G. Payne, is, as already mentioned, inspector of common lodging houses, at a salary of 5*l*. per annum. He is also inspector, under the Food and Drugs Act, at a salary of 20*l*. per annum.

The isolation hospital (for cases of infectious disease other than small-pox) is the property of the local port sanitary authority, and consists of administrative buildings and a single pavilion, erected more than twenty years ago out of revenue. It is brick-built, and comprises two wards on either side of a nurses' sitting-room and bath-room. Each ward measures 33 feet by 22 feet by 14 feet,

and was designed to hold six beds. As these two wards are in communication with one another through the nurse's duty-room, the building can properly be used for only one infectious disease at a time. The administrative buildings consist of a three-roomed brick-built cottage, and an adjoining corrugated iron building containing two beds. There is no laundry or mortuary. The water supply is from the town mains. Earth-closets are in use, the excreta being buried on the hospital site. Slop liquids are drained to a tank, the overflow from which is apparently allowed to soak away into an adjacent dyke.

The ward pavilion is only a few feet removed from the low open fence enclosing it. The site is only about $\frac{1}{3}$ acre in area, and forms part of a large area of corporation land hereabouts. There is no disinfecting chamber at the hospital, but the corporation possess and keep at the town yard, at a short distance from the hospital, a Washington Lyon's steam disinfector. At the town yard an old unlined iron-tyred cab is kept for use as an ambulance. I found, also, that a kind of hand-barrow ambulance had been purchased, and this is kept at the hospital, but it does not seem ever to have been used. No permanent nursing staff is kept at the isolation hospital. Nurses are obtained from Cambridge or elsewhere, as required.

It is strange that in a borough like Lynn the town council has not provided a suitable hospital for the isolation of cases of infectious disease other than small-pox. Apparently the late medical officer of health laid no special stress upon the want of such an institution, holding that diphtheria cases can be isolated at home. The town council allege the small amount of diphtheria in Lynn as a reason for their inactivity in this matter. It appears to be the custom to send into the West Norfolk and Lynn general hospital any diphtheria cases likely to require tracheotomy. Enteric fever cases are also admitted to that institution, to the funds of which the corporation contribute 10*l.* 10*s.* annually.* Enteric cases are received and treated in the general wards, but, according to the present rule, not more than six cases can be treated in the hospital at one time. The diphtheria cases are received in the "Freeman" ward, which is a small detached cottage containing three small rooms for patients, and one for a nurse. This building was erected, I am informed, for the reception of hospital cases requiring isolation.

A small-pox hospital constructed of corrugated iron and timber was erected in 1902, at a spot known as "Nowhere," about a mile from Lynn, upon a site about half an acre in extent. It comprises two wards, each about 30 feet by 20 feet by 14 feet, placed on either side of a kitchen, a sitting-room, and three bedrooms for nurses. At the further extremity of each ward, which is intended to hold six beds, is placed a projection containing an earth-closet and a bath-room. There is no supply of hot water to the bath. A separate building contains a laundry and drying room, also two coal sheds and an earth-closet. Slop liquids are drained to a bricked tank and allowed to soak away. There is no mortuary.

* The guardians of the Lynn Union contribute £42 annually.

Drinking water has to be carried to this hospital, as the local supply from a well on the site is unfit for drinking purposes.

The site of this hospital is isolated, but it is enclosed only by an open fence. It appears to be in contemplation to make temporary use of this hospital in the event of any sudden emergency caused by pressure at the isolation hospital.

Disinfection of infected premises is carried out under the supervision of the inspector of nuisances. Formalin spray is used, and rooms are also disinfected by means of formalin gas. Bedding and clothing requiring disinfection are conveyed to the disinfector in a hand cart, which is also kept at the town yard. I found this place open and accessible to anyone. After disinfection the various articles are taken back by the same* means to their owners. The Inspector of Nuisances keeps a record of all goods thus dealt with, as well as of rooms and premises disinfected. It is customary to secure, whenever possible, the stripping of papered walls of rooms wherein infectious disease has occurred, and disinfectants are given together with instructions concerning their use. In cases of scarlatina carbolised oil is supplied. Printed bills of instruction regarding the steps to be taken to secure isolation of the infectious sick are also furnished.

The relations between the Town Council and their late Medical Officer of Health.

The late Medical Officer of Health, Mr. Allinson, complained of lack of co-operation with him on the part of the health committee, in dealing with insanitary property in the borough. The Town Council, on the other hand, in a letter to the Board on November 9th, 1908, signed by the Town Clerk and approved by them, deny any lack of such co-operation, and further find fault with the manner in which Mr. Allinson had discharged his duties because of his delay in preparation of the supplementary report called for by the Board in their letter of August 5th, 1908, and also, because of his attitude towards the public water supply in relation with enteric fever in the borough.

As regards the delay in furnishing the supplementary report referred to, it is to be observed that Mr. Allinson answered the Board's letter on August 6th, saying that he was preparing such a report as would, he trusted, completely satisfy the Board's requirements, and hoped to devote to it the rest of the year so as to make it clear and particular in all respects, and asking the Board to await his report for the year 1908. The Board, in reply, requested to be furnished with a copy of this special report; and Mr. Allinson appears to have taken this reply as giving assent to the postponement of the supplementary report that had been called for.

As regards the alleged lack of co-operation of the health committee with Mr. Allinson while Medical Officer of Health, the particular occasion cited is in relation with a list of dwellings,

* I did not understand by what method this hand cart is disinfected, or, indeed, if it be disinfected at all.

either in an insanitary condition or unfit for human habitation, submitted by him to the health committee in September, 1907. The committee decided that the Inspector of Nuisances should serve notices upon the owners of the insanitary premises, and, that as regards the houses considered by the Medical Officer of Health to be unfit for human habitation, it was desirable that the worst cases in each ward of the borough should be first dealt with, and that the Medical Officer of Health should report accordingly. Mr. Allinson does not seem to have reported, as instructed, having apparently regarded this action of the committee in respect of the houses unfit for human habitation as tantamount to shelving the question. As to Mr. Allinson's attitude towards the public water supply in relation with enteric fever, this is probably the question upon which he has come most into collision with his authority. In this connection the Town Council state in their letter that Mr. Allinson holds views which are "out of the ordinary," and recall the fact that when the question of abolishing the former impure water supply from the Gaywood river was in the acute phase, a memorandum to the Town Council was drawn up praying that a new water supply should be given. This memorandum was signed by every medical man in the borough except Mr. Allinson, who definitely declined to sign it.

But Mr. Allinson's present charge is brought against the water mains and service pipes and not against the water at its source. Mr. Allinson contends that insuction of infectious material has occurred through old and defective mains and service pipes. As to this the Town Council state that in 1900, with the Board's sanction, they raised a loan of £2,500 for the renewal of every water main, where in any degree desirable, and that the whole sum was thus expended. Mr. Allinson, however, claims that many mains needing renewal were not renewed, though he is not in a position to specify them.

The Town Council in their letter go on to say that for some time, in consequence of Mr. Allinson's contention, whenever a case of enteric fever occurred the water mains in connection with the house implicated were exposed and examined, but that the result of the examination was invariably negative.

Convinced at last that money was being wasted, it was decided to discontinue this practice, though the Water Engineer was instructed to open the ground and examine any pipe specifically indicated by Mr. Allinson as requiring examination, and that such examination was to take place in his presence. The letter states that of this offer Mr. Allinson had only once availed himself. The Engineer was further specially ordered to notify Mr. Allinson of every leakage found in any water main, and the Town Council in their letter say that in only eight out of 52 instances in which such notifications were sent to Mr. Allinson did he make visits of inspection.

Mr. Allinson tells me that he is unable to find that he received more than 36 of these notifications. I ascertained by examination of the Water Engineer's letter book that, as matter of fact, in the year 1908 more than 52 such letters of notification were written to Mr. Allinson.

I do not consider however that Mr. Allinson can be blamed, in that he did not personally inspect each leak. It is not incumbent on a Medical Officer of Health to inspect all the leaks discovered in water mains by the Borough Engineer. Nor, in the circumstances, was it always practicable for Mr. Allinson to make such inspections, inasmuch as the notices of leakage seem, in nearly every instance, to have reached him by first post in the morning and to have informed him that the leak would be ready for his inspection at half-past ten the same morning. This hour is the busiest in the day of a medical man in extensive practice. Moreover, the Engineer was naturally impatient to close the ground as quickly as possible, and take off his men to other work.

Another matter which, I was given to understand, had brought Mr. Allinson into serious conflict with his Council, is the fact that without the knowledge or sanction of the Council, he communicated with the County Medical Officer, and accompanied that official on his visit to the borough.

Lastly, I am assured that by injudicious speech as well as by his course of action, Mr. Allinson had given such offence to various members of the Town Council that they feel they could no longer work with him.

Consideration of the relations that obtained between the Town Council and Mr. Allinson, when he was their Medical Officer of Health, leads to the conclusion that there were faults on both sides.

The available evidence did not justify Mr. Allinson's persistent reference of enteric fever in King's Lynn to defective water mains and service pipes. It is right that a Medical Officer of Health should be prepared to regard with suspicion every possible cause of unexplained occurrence of enteric fever; but he is not justified in taking so serious a step as that of definitely incriminating a public water service, save on sufficient grounds. The grounds on which he took this step were not, in my judgment, sufficient. On the other hand the many insanitary conditions that obtain in King's Lynn, as well as the inefficient manner in which the building bye-laws have been applied, indicate a laxity of administration in matters affecting the public health which tends to support Mr. Allinson's complaint that he had not the co-operation of his sanitary authority in his work as Medical Officer of Health.

It is to be regretted that the Town Council, when they determined to dispense with the services of Mr. Allinson, did not persevere in their first-expressed intention to appoint a Medical Officer of Health not engaged in private practice. There are, however, not wanting enlightened members of the Corporation, who see that the peculiarly difficult problems of housing, as well as other points of sanitary administration in the borough cannot be efficiently and firmly dealt with by any Medical Officer of Health who is compelled at the same time to carry on local private practice. It is not improbable that in the future a scheme of combination with another district, or districts, will be found the best and least costly method of obtaining satisfactory service by a Medical Officer of Health.

RECOMMENDATIONS.

The following points I recommend to the early attention of the town council :—

1. The town council should give careful and systematic attention to the housing question in the borough.
2. The town council should provide themselves, as soon as possible, with a sufficiency of hospital accommodation, properly equipped, and a suitable ambulance for the conveyance of cases of infectious disease.

It would be advisable to construct at the hospital a disinfecting block, at which the present disinfecter should be installed.

For the whole structure and appurtenances of the hospital a sufficient area should be enclosed, and surrounded by a close fence, in accordance with the Board's requirements.

3. The town council should revise their bye-laws respecting slaughter-houses, and should take into consideration the provision of a public abattoir. The many foul conditions at present existing in slaughter-houses should at once receive attention.
4. The town council should discharge the duty imposed upon them by clause 80 of the Public Health Act, 1875, and should make bye-laws respecting common lodging houses, and these bye-laws should be enforced. The inspection of these places should be entrusted to the sanitary department.
5. The town council should adopt the Board's model code of regulations for dairies, cowsheds, and milkshops, and these regulations should be strictly enforced.
6. The question of the culverting of the Purfleet sewer outfall should be taken into consideration. Steps should be taken to prevent the discharge of water-closet drains upon the foreshore and upon the banks of the Purfleet.
6. The bye-laws respecting new buildings should be enforced.

It is a pleasure as well as a strict duty to acknowledge the courtesy I have received from the town council of Lynn, as well as from their officers.

My special thanks are due to the town clerk, Mr. J. W. Woolstencroft, and his obliging staff for help readily and cheerfully given at all times. I am greatly indebted to the late medical officer of health, Mr. H. C. Allinson, for the trouble he has taken and the time he has bestowed on assisting me. I have also to thank the inspector of nuisances, Mr. J. W. Shaw, and the surveyor and borough engineer, Mr. J. H. Webb, C.E., for their assistance.

F. ST. GEORGE MIVART.
